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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/365,510	08/02/1999	KENJI SUZUKI	35.C13719	1896

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EXAMINER	
MAYES, MELVIN C	
ART UNIT	PAPER NUMBER
1734	

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/365,510	SUZUKI ET AL.	
	Examiner	Art Unit	
	Melvin Curtis Mayes	1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 May 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 10-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 10-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

(1)

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

(2)

Claims 1, 4 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 59-091079 in view of Sneed and either Simpson et al. 5,891,824 or Yamamaoto et al. 4,756,963.

JP 59-091079 discloses a method and apparatus for recording comprising: recording an image on a recording paper by ink jet recording heads 12; feeding the imaged paper and a laminate material to a roller pair 27 where their leading ends are aligned and laminated; and feeding the laminate to a pressure roller pair 28 with built-in heater where the laminate material is applied onto the surface of the imaged paper through melting under heating to protect the image. The laminate material is a porous resin film which becomes transparent when welded to the imaged paper and the pressure roller pair comprises rollers 28 having heaters 29 (Abstract and oral translation). JP '079 does not disclose that the recording paper has an image receiving layer such as one containing particles of diameter of 0.1 to 10 microns or that the laminate resin material has a thickness of 2-40 μm.

Sneed teaches that in producing recording media used in ink jet printers, polymer binder is used in combination with fillers to form the coating composition on the support to provide the desired matte surface and opaque appearance. Sneed teaches that the fillers which provide a

substantial means of ink absorption due to their porous nature should have a particle size of at least 0.1 microns and a maximum of 25 microns to produce the desired matte surface, examples of such filler including precipitated silicas, fumed silicas, kaolin, clays and zeolites (col. 2, lines 32-36, col. 7, lines 24-57).

Simpson et al. teach that a transparent protective sheet for laminating to an imaged receiving element has thickness of from about 2 to 250 μm (col. 3, lines 42-45).

Yamamoto et al. teach that a layer for laminating to a recorded image for protecting the image such as an ink jet recorded image should have a thickness of 1-100 μm, preferably 5-50 μm (col. 6, lines 37-40).

It would have been obvious to one of ordinary skill in the art to have modified the method of JP '079 for recording by providing the recording paper for ink jet printing with an image receiving coating, as taught by Sneed, to provide ink jet recording media with the desired matte surface and opaque appearance. Providing the coating (image receiving layer) with inorganic particles of diameter in the range of 0.1 to 25 microns (encompassing the range of 0.1 to 10 microns claimed in Claim 1) would have been obvious to one of ordinary skill in the art, as taught by Sneed, to provide the coating with a filler which provides a substantial means of ink absorption due to their porous nature and which produces the desired matte surface, examples of such filler being inorganics such as precipitated silicas, fumed silicas, kaolin, clays and zeolites.

It would have been obvious to one of ordinary skill in the art to have further modified the method of JP '079 by providing the laminate resin material of thickness in the range of 2-250 μm or 1-100 μm (encompassing the range of 2-40 μm as claimed in Claims 1 and 10), as taught by either Simpson et al. or Yamamoto et al., as thicknesses of the transparent sheet or layer

laminated to am imaged element to protect an recorded image. Providing the laminate material of thickness in the range of 2-40 μm would have been obvious to one of ordinary skill in the art as thicknesses suitable for a resin film for laminating to an imaged medium for protecting the image, as taught by Simpson et al. or Yamamoto et al.

By melting the laminate material resin film by the pressure roller having a heater, the surface of the resin film is obviously plasticized (made plastic) and smoothed with the heated pressure roller (heating and pressurizing means) to bond the film onto the image receiving layer (coating) of the recording paper, as claimed.

(3)

Claims 1-4 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 59-091079 in view of Sneed and either Simpson et al. 5,891,824 or Yamamaoto et al. 4,756,963, further in view of JP 10-44605.

JP 59-091079 discloses a method and apparatus for recording comprising: recording an image on a recording paper by ink jet recording heads 12; feeding the imaged paper and a laminate material to a roller pair 27 where their leading ends are aligned and laminated; and feeding the laminate to a pressure roller pair 28 with built-in heater where the laminate material is applied onto the surface of the imaged paper through melting under heating to protect the image. The laminate material is a porous resin film which becomes transparent when welded to the imaged paper and the pressure roller pair comprises rollers 28 having heaters 29 (Abstract and oral translation). JP '079 does not disclose that the recording paper has an image receiving layer such as one containing particles of diameter of 0.1 to 10 microns or that the laminate resin material has a thickness of 2-40 μm.

Sneed teaches that in producing recording media used in ink jet printers, polymer binder is used in combination with fillers to form the coating composition on the support to provide the desired matte surface and opaque appearance. Sneed teaches that the fillers which provide a substantial means of ink absorption due to their porous nature should have a particle size of at least 0.1 microns and a maximum of 25 microns to produce the desired matte surface, examples of such filler including precipitated silicas, fumed silicas, kaolin, clays and zeolites (col. 2, lines 32-36, col. 7, lines 24-57).

Simpson et al. teach that a transparent protective sheet for laminating to an imaged receiving element has thickness of from about 2 to 250 μm (col. 3, lines 42-45).

Yamamoto et al. teach that a layer for laminating to a recorded image for protecting the image such as an ink jet recorded image should have a thickness of 1-100 μm, preferably 5-50 μm (col. 6, lines 37-40).

JP 10-44605 teaches that the protective layer of a recorded paper can be enhanced in glossiness by feeding the recording paper between a heated mirror-plane cylinder 40 of mirror plane of 200% or more and platen roller 34 to heat and press the protective layer to soften the protective layer (computer translation, paragraphs 0019-0024).

It would have been obvious to one of ordinary skill in the art to have modified the method of JP '079 for recording by providing the recording paper for ink jet printing with an image receiving coating, as taught by Sneed, to provide ink jet recording media with the desired matte surface and opaque appearance. Providing the coating (image receiving layer) with inorganic particles of diameter in the range of 0.1 to 25 microns (encompassing the range of 0.1 to 10 microns claimed in Claim 1) would have been obvious to one of ordinary skill in the art, as

taught by Sneed, to provide the coating with a filler which provides a substantial means of ink absorption due to their porous nature and which produces the desired matte surface, examples of such filler being inorganics such as precipitated silicas, fumed silicas, kaolin, clays and zeolites.

It would have been obvious to one of ordinary skill in the art to have further modified the method of JP '079 by providing the laminate resin material of thickness in the range of 2-250 μm or 1-100 μm (encompassing the range of 2-40 μm as claimed in Claims 1 and 10), as taught by either Simpson et al. or Yamamoto et al., as thicknesses of the transparent sheet or layer laminated to am imaged element to protect an recorded image. Providing the laminate material of thickness in the range of 2-40 μm would have been obvious to one of ordinary skill in the art as thicknesses suitable for a resin film for laminating to an imaged medium for protecting the image, as taught by Simpson et al. or Yamamoto et al.

It would have been obvious to one of ordinary skill in the art to have modified the method and apparatus of the references as combined by providing the heated pressure roller of mirror plane of 200% or more, as taught by JP '605, to enhance glossiness of the laminate material resin film. By feeding the laminate of resin film and imaged paper between heated mirror-plane rollers of mirror plane of 200% or more after laminating, as taught by JP '605, the surface of the resin film is obviously plasticized (made plastic) and smoothed by a heat roller (heating and pressurizing means) of surface glossiness of 10% or greater than 70% as claimed in Claims 2 and 3.

(4)

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 1 above, and further in view of Shirota et al.

Shirota et al. teach that a transparent laminate member for treating the image surface formed on paper by ink jet recording to impart gloss, etc. to the recorded image can be a single layer of thermoplastic resin or a multilayer (col. 12, lines 51-62, col. 13, lines 22-34).

It would have been obvious to one of ordinary skill in the art to have modified the method of the references as combined by providing the laminate resin film as a multilayer, as taught by Shirota et al., as an alternative to a single layer for providing a transparent laminate member for treating the image surface formed on paper by ink jet recording. The use of a laminate material film of two or more resin films or of a single resin film layer, as taught by Shirota et al., would have been obvious to one of ordinary skill in the art.

(5)

Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claims 1 and 10 above in paragraph (4), and further in view of Stone 4,978,560.

Stone teaches that a hot roll glosser which is used to gloss or transparentize resin coated receiver sheets comprises internally heated rolls, the rolls to come into contact with the resin having a gloss silicone rubber overcoat to prevent adhesion or sticking of the resin with the surface and to provide the desired glossing and transparentizing of the resin. Stone further teaches that the silicon rubber coating should have a smoothness in the order of 16 microinches (0.4 μm) or better (col. 5, line 61 – col. 6, line 14).

It would have been obvious to one of ordinary skill in the art to have modified the method of the references as combined by providing the heated pressure roll used to transparentize and impart glossiness to the laminate resin material with a surface of silicone rubber, as taught by Stone, to prevent adhesion or sticking of the resin with the surface and to provide the desired glossing and transparentizing of the resin.

(6)

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 59-091079 in view of either Simpson et al. 5,891,824 or Yamamaoto et al. 4,756,963, further in view of JP 10-44605 and Stone 4,978,560.

JP 59-091079 discloses an apparatus for recording comprising: recording an image on a recording paper by ink jet recording heads 12 (ink-jet head); feeding the imaged paper and a laminate material to a roller pair 27 where their leading ends are aligned and laminated (laminate section); and feeding the laminate to a pressure roller pair 28 with built-in heater where the laminate material is applied onto the surface of the imaged paper through melting under heating to protect the image (heating and pressurizing means). The laminate material is a porous resin film which becomes transparent when welded to the imaged paper and the pressure roller pair comprises rollers 28 having heaters 29 (Abstract and oral translation). JP '079 does not disclose that the laminate resin material has a thickness of 2-40 μm or that the roller of the pressure roller pair that comes into contact with the laminate resin material has a surface roughness of 3 μm or less.

Simpson et al. teach that a transparent protective sheet for laminating to an imaged receiving element has thickness of from about 2 to 250 μm (col. 3, lines 42-45).

Yamamoto et al. teach that a layer for laminating to a recorded image for protecting the image such as an ink jet recorded image should have a thickness of 1-100 μm, preferably 5-50 μm (col. 6, lines 37-40).

JP 10-44605 teaches that the protective layer of a recorded paper can be enhanced in glossiness by feeding the recording paper between a heated mirror-plane cylinder 40 of mirror plane of 200% or more and platen roller 34 to heat and press the protective layer to soften the protective layer (computer translation, paragraphs 0019-0024).

Stone teaches that a hot roll glosser which is used to gloss or transparentize resin coated receiver sheets comprises internally heated rolls, the rolls to come into contact with the resin having a gloss silicone rubber overcoat to prevent adhesion or sticking of the resin with the surface and to provide the desired glossing and transparentizing of the resin. Stone further teaches that the silicon rubber coating should have a smoothness in the order of 16 microinches (0.4 μm) or better (col. 5, line 61 – col. 6, line 14).

It would have been obvious to one of ordinary skill in the art to have modified the apparatus of JP '079 by providing the protective laminate resin material of thickness in the range of 2-250 μm or 1-100 μm (encompassing the range of 2-40 μm as claimed), as taught by either Simpson et al. or Yamamoto et al., as thicknesses of the transparent sheet or layer laminated to am imaged element to protect an recorded image. Providing the laminate material of thickness in the range of 2-40 μm would have been obvious to one of ordinary skill in the art as thicknesses suitable for a resin film for laminating to an imaged medium for protecting the image, as taught by Simpson et al. or Yamamoto et al.

It would have been obvious to one of ordinary skill in the art to have modified the apparatus of JP '079 by providing the heated pressure roller of mirror plane of 200% or more, as taught by JP '605, to enhance glossiness of the laminate material resin film. By feeding the laminate of resin film and imaged paper between heated mirror-plane rollers of mirror plane of 200% or more after laminating to enhance glossiness, as taught by JP '605, the surface of the resin film is obviously plasticized (made plastic) and smoothed by a heated pressure roller (heating and pressurizing means).

Further, providing the heated pressure roller with a gloss surface by providing the surface with a smoothness (surface roughness) of 16 microinches (0.4 μm) or better (within the range of 3 μm or less as claimed) would have been obvious to one of ordinary skill in the art, as taught by Stone, as the smoothness of a hot roll glosser used for glossing and transparentizing a resin coating.

It would have been obvious to one of ordinary skill in the art to have even further modified the apparatus of the references as combined by providing the heated pressure roll used to transparentize and impart glossiness to the laminate resin material with a surface of silicone rubber, as taught by Stone, to prevent adhesion or sticking of the resin with the surface and to provide the desired glossing and transparentizing of the resin.

Response to Arguments

(7)

Applicant's arguments filed May 3, 2004 have been fully considered but they are not persuasive.

Applicant argues that by using a thermoplastic film of thickness of 2 to 40 microns, the film surface can be smoothed without the unevenness of the recording medium appearing on the surface of the film. Applicant argues that Togano et al. (JP '079) does not disclose or suggest a laminating film of thickness of 2-40 microns, argues that Sneed doe not remedy the deficiencies of Togano et al., argues that the protective member of Yamamoto et al. is a transfer layer supported by a substrate and cannot be used to modify Togano et al., argues that Simpson et al. laminates heat-transfer imaging paper which naturally have smooth surfaces and cannot be used to modify Togano et al.

(8)

The Examiner takes the position that a transparent resin film which covers and protects the recorded surface of a recording material as disclosed by Togano et al. would level any unevenness of the recording material surface caused by recording.

Simpson et al. and Yamamoto et al. are pertinent to the method of Togano et al. because the references respectively teach that a transparent protective sheet or layer for laminating to an imaged receiving element has thickness of from about 2 to 250 μm or of 1-100 μm, preferably 5-50 μm, which ranges encompass the claimed range of 2 to 40 microns. According to the specification, thickness of 2 to 40 microns is merely preferred. While Yamamoto et al. may provide the protective sheet by transfer, the thickness of the protective sheet is pertinent to

Togano et al. regardless of how the sheet is provided to the imaged element. With respect to apparatus Claim 6, the film and its thickness impart no patentability for it relates to a workpiece (the film) being worked upon by the apparatus.

Conclusion

(9)

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

(10)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin Curtis Mayes whose telephone number is 571-272-1234. The examiner can normally be reached on Mon-Fri 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on 571-272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Melvin Curtis Mayes
Primary Examiner
Art Unit 1734

MCM
July 1, 2004